

A damascene interconnect that reduces interconnect intra-layer capacitance and/or inter-layer capacitance is provided. The damascene interconnect structure has air gaps between metal lines and/or metal layers. The interconnect structure is fabricated to a via level through a processing step prior to forming contact vias, then one or more air gaps are formed into the damascene structure so that the air gaps are positioned between selected metal lines. A sealing layer is then deposited over the damascene structure to seal the air gaps.